

Matched GaAs SPDT Switch

DC - 3 GHz with TTL/CMOS Control Inputs SW10-0313

V3.00

Features

- Integral Driver
- Low DC Power Consumption
- TTL and CMOS Input Compatible
- Surface Mount Package
- Low Cost/High Performance

Guaranteed Specifications^{1,2} (From -40°C to +85°C)

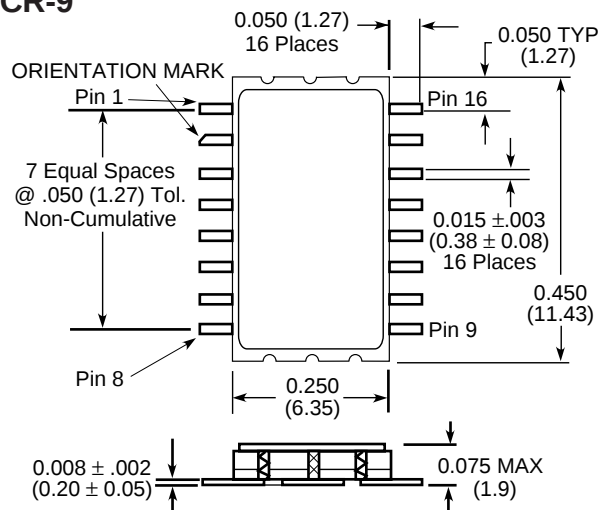
Frequency Range		DC-3000 MHz	
Insertion Loss	DC-3000 MHz	0.8 Typ.	1.2 dB Max
	DC-2000 MHz	0.7 Typ.	1.1 dB Max
	DC-1000 MHz	0.7 Typ.	0.9 dB Max
	DC- 500 MHz	0.6 Typ.	0.8 dB Max
VSWR	DC-3000 MHz	1.2 Typ.	1.4:1 Max
	DC-2000 MHz	1.2 Typ.	1.35:1 Max
	DC-1000 MHz	1.2 Typ.	1.35:1 Max
	DC- 500 MHz	1.1 Typ.	1.3:1 Max
Isolation	DC-3000 MHz	40 Typ.	35 dB Min
	DC-2000 MHz	50 Typ.	45 dB Min
	DC-1000 MHz	50 Typ.	45 dB Min
	DC- 500 MHz	55 Typ.	50 dB Min

Operating Characteristics

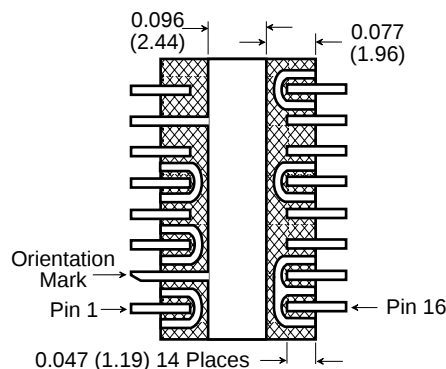
Impedance			50 Ohms Nominal
Switching Characteristics			
Trise, Tfall (10% to 90%)			50 ns Typ
Ton, Toff (1.3V CTL to 90%/10%)			150 ns Typ
Transients (in-Band)			50 mV Typ
Input Power for 1 dB Compression			
0.05 GHz			+25 dBm Typ
0.5 GHz to 3 GHz			+30 dBm Typ
Intermodulation Intercept point (for two-tone input power up to +5 dBm)			
<u>Intercept Points</u>		<u>IP2</u>	<u>IP3</u>
0.05 GHz		+60	+40
0.5 GHz to 3 GHz		+65	+46
			dBm Typ
			dBm Typ
Supply Voltage Ranges			
V _{CC}		+5.0V ±10% @ 1 mA Max	
V _{EE}		-5.0V to -8.0V @ 1 mA Max	
Control Voltage Range			
Vin Low		0V to 0.8V @ 1 µA Max	
Vin Hi		2.0V to 5.0V @ 1 µA Max	

1. All specifications apply when operated with a 50 ohm impedance at both RF ports.
2. There should be a DC return on the RFC port. The DC return can be either a 10k ohm resistor or an RF choke.

CR-9



Bottom View



Bottom of case is AC ground.
Dimensions in () are in mm.
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)
.xx = ±0.02 (.x = ±0.5)

Ordering Information

Model No.	Package
SW10-0313	Ceramic

Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Max. Input Power	
50 MHz	+27 dBm
500 - 2000 MHz	+34 dBm
Supply Voltages	
V _{CC}	+5.5V
V _{EE}	-8.5V
Control Voltage	-0.5V, to V _{CC} +0.5V
Operating Temperature	-40°C to +125°C
Storage Temperature	-65°C to +150°C

1. Operation of this device above any one of these parameters may cause permanent damage.

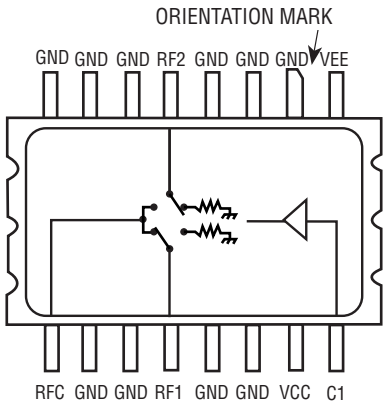
Pin Configuration

Pin No.	Description	Pin No.	Description
1	V _{EE}	9	RFC
2	GND	10	GND
3	GND	11	GND
4	GND	12	RF1
5	RF2	13	GND
6	GND	14	GND
7	GND	15	V _{CC}
8	GND	16	C1

Truth Table

	Condition of Switch	
	RF Common to Each RF Port	
C1	RF1	RF2
LO HIGH	ON	OFF
	OFF	ON

Pin Configuration



Typical Performance @ +25°C

